IN THE CLAIMS

- 1 (Withdrawn). A method comprising:

 reducing the grain size of a phase change material; and

 reducing the crystallization time of the phase change material.
- 2 (Withdrawn). The method of claim 1 wherein reducing the grain size of the phase change material includes doping the material with nitrogen.
- 3 (Withdrawn). The method of claim 2 wherein reducing the grain size of the phase change material includes doping the material with nitrogen and oxygen.
- 4 (Withdrawn). The method of claim 1 wherein reducing the crystallization time of the phase change material includes doping the phase change material with titanium.
- 5 (Withdrawn). The method of claim 4 including doping the phase change material with ions of titanium.
 - 6 (Withdrawn). The method of claim 5 including sputtering titanium.
- 7 (Withdrawn). The method of claim 5 including ion implanting titanium to reduce the crystallization time of the phase change material.
- 8 (Withdrawn). The method of claim 4 including providing a layer of titanium proximate to said phase change material.
- 9 (Withdrawn). The method of claim 8 including providing the layer of titanium sufficiently proximate to the phase change material that when the titanium is heated, titanium diffuses into the phase change material.

- 10 (Withdrawn). The method of claim 9 including causing the titanium to diffuse into the phase change material as a result of heating during processing of the phase change material.
 - 11 (Original). A phase change material comprising:
 - a chalcogenide;
 - a species introduced into the chalcogenide material to reduce grain size; and a species introduced into the chalcogenide to increase crystallization speed.
 - 12 (Original). The material of claim 11 wherein said chalcogenide includes Ge₂Sb₂Te₅.
- 13 (Original). The material of claim 11 wherein the grains of the chalcogenide are less than approximately 10 nanometers.
- 14 (Original). The material of claim 11 wherein the species to reduce grain size includes nitrogen.
- 15 (Original). The material of claim 11 wherein the species to increase crystallization speed includes titanium.
 - 16 (Original). A device comprising:
 - a substrate; and
- a layer of chalcogenide material over said substrate, said chalcogenide material including a species to reduce the grain size of the chalcogenide material and a species to increase the crystallization speed of said chalcogenide material.
- 17 (Original). The device of claim 16 wherein said chalcogenide material includes Ge₂Sb₂Te₅.
- 18 (Original). The device of claim 16 wherein the grains of the chalcogenide material are less than approximately 10 nanometers.

- 19 (Original). The device of claim 16 wherein the species to reduce grain size includes nitrogen.
- 20 (Original). The device of claim 16 wherein the species to increase crystallization speed includes titanium.
 - 21 (Original). The device of claim 16 wherein the device is a semiconductor memory.
- 22 (Original). The device of claim 16 including an insulator over said substrate and under said chalcogenide material.
- 23 (Original). The device of claim 22 including a heater extending through said insulator to said chalcogenide material to heat said chalcogenide material.
- 24 (Original). The device of claim 16 including titanium containing layer under said chalcogenide material.
- 25 (Original). The device of claim 24 wherein said titanium containing layer is sufficiently proximate to said chalcogenide material that titanium may diffuse into the phase change material upon heating.
 - 26 (Original). A system comprising:
 - a processor-based device;
 - a wireless interface coupled to said processor-based device; and
- a semiconductor memory coupled to said device, said memory including the substrate, said memory further including a layer of chalcogenide material over said substrate, said chalcogenide material including a species to reduce the grain size of the chalcogenide material and a species to increase the crystallization speed of said chalcogenide material.
- 27 (Original). The system of claim 26 wherein the species to reduce grain size includes nitrogen.

- 28 (Original). The system of claim 26 wherein the species to increase crystallization speed includes titanium.
- 29 (Original). The system of claim 26 including an insulator over said substrate and under said chalcogenide material.
- 30 (Original). The system of claim 29 including a heater extending through said insulator to said chalcogenide material to heat said chalcogenide material.